PTO/SB/21 (09-04)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission	9

Application Number	09/520,927
Filing Date	March 8, 2000
First Named Inventor	EDWARD J. CLEARY, JR.
Art Unit	2672
Examiner Name	Ryan R. Yang
Attorney Docket Number	6960 US

ENCLOSURES *(Check all that apply)*

- [x] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
- [ ] Petition
- [ ] Petition to Convert to a Provisional Application
- [ ] Power of Attorney, Revocation Change of Correspondence Address
- [ ] Terminal Disclaimer
- [ ] Request for Refund
- [ ] CD, Number of CD(s) _____
  - [ ] Landscape Table on CD
- [ ] After Allowance Communication to TC
- [ ] Appeal Communication to Board of Appeals and Interferences
- [x] Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- [ ] Proprietary Information
- [ ] Status Letter
- [x] Other Enclosure(s) (please Identify below):
  APPENDIX

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	TEKTRONIX, INC.		
Signature	Francis I. Gray		
Printed name	FRANCIS I. GRAY		
Date	DECEMBER 13, 2004	Reg. No.	27,788

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature	Pauline L. Bradley		
Typed or printed name	Pauline L. Bradley	Date	December 13, 2004

PTO/SB/17 (10-01)
Approved for use through 10/31/2002. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT ($) 500.00

Complete if Known	
Application Number	09/520,927
Filing Date	03/08/2000
First Named Inventor	EDWARD J. CLEARY, JR.
Examiner Name	Ryan R. Yang
Group Art Unit	2672
Attorney Docket No.	6960 US

METHOD OF PAYMENT

1. ☑ The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:
   - Deposit Account Number: 20-0352
   - Deposit Account Name: TEKTRONIX, INC.
   - ☑ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17
   - ☐ Applicant claims small entity status. See 37 CFR 1.27
2. ☐ **Payment Enclosed:** ☐ Check ☐ Credit card ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

SUBTOTAL (1) ($)

2. EXTRA CLAIM FEES

	Extra Claims		Fee from below	Fee Paid
Total Claims	-20** =	X		=
Independent Claims	- 3** =	X		=
Multiple Dependent				=

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	500.00
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	
Other fee (specify)					

*Reduced by Basic Filing Fee Paid **SUBTOTAL (3)** ($) 500.00

SUBMITTED BY				Complete *(if applicable)*	
Name (Print/Type)	Francis I. Gray	*Registration No. (Attorney/Agent)*	27,788	*Telephone*	(503) 627-7261
Signature	Francis I. Gray			*Date*	12/13/2004

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AF/2672

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **EDWARD J. CLEARY, JR. and STEVEN A. KRONSCHNABEL**

Filed: **March 8, 2000**

Examiner: **Ryan R. Yang**

Serial No.: **09/520,927**

Art Unit: **2672**

For: **SURROUND SOUND DISPLAY**

Mail Stop Appeal Brief - Patents
COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, VA 22313-1450

December 13, 2004

APPELLANTS' BRIEF

Dear Sir:

This is an appeal from the Office communication dated June 14, 2004 finally rejecting claims 1, 2 and 7-9 in the above-identified application over prior art.

Real Party in Interest

The real party in interest in this appeal is Tektronix, Inc., an Oregon corporation, Appellants' assignee.

Related Appeals and Interferences

There are no related appeals and interferences known to Appellants, Appellants' legal representative or Appellants' assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

Status of Claims

Claims 1, 2 and 7-9 stand finally rejected under 35 U.S. C 103(a) as being unpatentable over Gibson (U.S. Patent No. 5,812,688, and are the claims appealed. Claims 3-6 and 10-15 are objected to, but are indicated as containing allowable subject matter.

Status of Amendments

There were no amendments filed subsequent to the final rejection.

Summary of the Invention

The present invention is a surround sound display for displaying certain characteristics, such as amplitude and phase relationships, of multi-channel sound. (Page 1, lines 6-8) The surround sound display includes a two-dimensional surround sound stage image **10** (Figs. 1-9) with a curvilinear correlation meter scale **12** for each sound channel of the surround sound stage image that has a corresponding sound channel to form a stereo sound source. The curvilinear meter scale includes markers **14** that represent the correlation between the corresponding sound channels. (Page 4, lines 5-18) The surround sound stage image may be speaker images positioned at appropriate positions of the display to represent sound sources. The markers may be a pointer for each sound channel, with the location along the correlation meter scale indicating the correlation between the corresponding sound channels; may be a fill area **16** spanning the correlation meter scales, the width indicating the correlation between the corresponding sound channels, with a thickness **A** (Fig. 7) indicating the amplitude of each sound channel.

Issues

Whether claims 1, 2 and 7-9 are rendered obvious to one of ordinary skill in the art under 35 U.S.C. 103(a) by Gibson?

Grouping of Claims

Claims 1 and 2 stand or fall together, and claims 7-9 each stand separately.

Argument

35 U.S.C. 103(a) provided in pertinent part that a "patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." The U.S. Supreme Court has set forth guidelines for making such a determination in *Graham v John Deere* 148 USPQ 459, 467 (1966): "the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved." Generally when an obviousness rejection is made, it is based upon a combination of references.

The Examiner rejected claim 1, stating that Gibson discloses a surround sound display representing a plurality of channels having a two-dimensional surround sound stage image (Fig. 5) with the argument that, since Gibson discloses the image in 3-dimensions, it would be obvious to one of ordinary skill in the art to know the conversion from 3-dimensional to 2-dimensional by just holding the third dimension constant. Appellants submit that to produce the 2-dimensional image

from a 3-dimensional image requires more than just holding the third dimension constant, it also requires determining which dimension will be constant. The Examiner further states that Gibson discloses a curvilinear correlation meter scale for each sound channel of the sound stage image that has a corresponding sound channel to form a stereo sound source (Fig. 5, x-axis 218) with the argument that, since the meter of various curvatures exists in the art, it would have been obvious to one of ordinary skill in the art to chose a curvature because this is within the boundary of a designer's choice. Appellants submit that in fact there is no scale at all in Gibson. The Examiner continues to state that Gibson discloses markers related to the correlation meter scale that represent the correlation between the corresponding sound channels (Fig. 7A) with the argument that the outer boundary of the sphere is the marker representing correlation between the corresponding sound channels. The Examiner concludes that Gibson discloses a surround sound display, but does not explicitly disclose "a correlation meter scale for each sound channel of the sound stage image that has a corresponding sound channel to form a stereo sound source". The Examiner infers that, since Gibson discloses (Fig. 7A) "spheres corresponding to selected channels are arranged in a 'V' formation" (column 6, lines 44-45), since the whole display is scaled by x- and y-axis, it would have been obvious to one of ordinary skill in the art to use the scale corresponding to each sphere as corresponding correlation meter to that channel in order to measure the magnitude of the sphere.

In contradistinction to Appellants' claimed invention Gibson discloses the use of visual images to mix sound, and particularly shows (Figs. 4 and 5) perspective views of a mix window into a three-dimensional room 200 with a floor 202, a ceiling 204, a left wall 106, a right wall 208 and a back wall 210 having a set of axes 218 -- x-axis, y-axis and z-axis. Each channel 12 of audio to be mixed is assigned a predefined visual image, such as a sphere, which has a number of visual

characteristics associated with it, such as size (frequency and amplitude), location (x = balance, y = frequency, z = amplitude), texture (waveform information), density (amplitude) and color (instruments, waveform patterns or frequency range). The user manipulates the visual images – panning horizontally, moving up and down, or moving in or out – to effect a desired mix of the channels. The spheres are translucent or transparent to allow for viewing images when they overlap. In other words the user moves the visual image for each mix channel left or right to emulate the sound coming more from one speaker 214 than the other, moves the image up and down to adjust the frequency, and moves the image in and out to adjust the amplitude. The resulting mix results in corresponding sound channels for a stereo sound source.

The differences between claim 1 and Gibson are clear – Appellants claim a two-dimensional sound stage while Gibson shows a three-dimensional sound stage; Appellants claim a curvilinear correlation meter scale for each sound channel while Gibson shows a visual image for each mix channel and does not have a scale of any kind; and Applicants claim markers related to the correlation meter scales while Gibson has no markers either since Gibson has no scale. The Examiner cites no concrete support for his conclusions, and Appellants submit that the Examiner is indulging in impermissible hindsight based upon what is taught by Appellants, not what is taught or suggested to one of ordinary skill in the art by Gibson. Note that the speakers in Gibson are not shown to represent sound sources, but rather represent the limits to the travel of the visual images in the x-axis direction.

With respect to claim 7 the Examiner equates the edge of the sphere in the x-direction in Fig. 8A of Gibson to the marker claimed by Appellants to indicate correlation between the corresponding sound channels. However as pointed out above the edge of the sphere is a function of frequency and amplitude, not correlation with another mix channel, and is not related to any scale.

Per claim 8 the Examiner equates the solid sphere in Fig. 8A of Gibson to the fill area claimed by Appellants as the marker to show correlation. As indicated above, the sphere is merely a visual image of a single mix channel, and does not show correlation with any other channel.

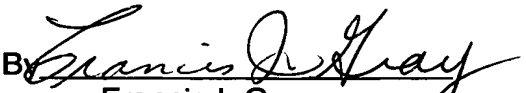
Finally referring to claim 9 the Examiner equates the density of the sphere, which is correlated with amplitude in Gibson, to the width of the fill area claimed by Applicants as indicating the amplitude of each sound channel. Density (degree of opacity of a translucent medium) is not the same as a linear dimensional change.

In view of the fact that Gibson does not disclose a single one of the elements recited in claims 1 and 7-9, there is no basis under *Graham v. John Deere* for finding any similarities between Gibson and Appellants' claimed invention that would lead one of ordinary skill in the art to obviously derive Appellants' claimed invention from Gibson's disclosure without the benefit of Appellants' disclosure. Therefore claims 1 and 7-9 are deemed to be allowable as being nonobvious to one of ordinary skill in the art over Gibson.

Thus Appellants request that the Examiner's rejection of claims 1, 2 and 7-9 be reversed, and that this case be passed to issue together with claims 3-6 and 10-15 dependent therefrom that already contain allowable subject matter.

Respectfully submitted,

EDWARD J. CLEARY, JR. et al

By 

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APPENDIX

Appealed Claims

Claim 1. A surround sound display representing a plurality of sound channels comprising:

a two-dimensional surround sound stage image;

a curvilinear correlation meter scale for each sound channel of the surround sound stage image that has a corresponding sound channel to form a stereo sound source; and

markers related to the correlation meter scales that represent the correlation between the corresponding sound channels.

Claim 2. The display as recited in claim 1 wherein the surround sound stage image comprises speaker images positioned at appropriate positions of the display to represent sound sources.

Claim 7. The display as recited in claim 1 wherein the markers comprise a pointer for each sound channel, the location of the pointer along the correlation meter scale indicating the correlation between the corresponding sound channels.

Claim 8. The display as recited in claim 7 wherein the markers comprise a fill area spanning the correlation meter scales for the corresponding sound channels, the width of the fill area indicating the correlation between the corresponding sound channels.

Claim 9. The display as recited in claim 8 wherein the thickness of the fill area indicates the amplitude of each sound channel.